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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,989	12/14/2005	Toshiki Nonaka	52433/828	3742

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EXAMINER

YEE, DEBORAH

ART UNIT	PAPER NUMBER
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1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,989	Applicant(s) NONAKA ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/14/05; 1/26/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-7, drawn to hot-dip galvanizing steel alloy sheet.

Group II, claim(s) 8 and 9, drawn to method of producing steel sheet by hot rolling, coiling, pickling cold rolling, recrystallization annealing, and skin pass rolling.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The common technical feature that Groups I and II share is the composition of claim 1. This composition does not provide a contribution over the prior art as evident by Japanese patent 2001-234281 or Japanese patent 2000-345288. Thus the two groups lack unity of invention. See MPEP 1850.

3. During a telephone conversation with Mr. John Kelly on December 13, 2007 a provisional election was made with traverse to prosecute the invention of group I, claims 1 to 7. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8 and 9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 to 7 are rejected under 35 U.S.C. 102(b) as being anticipated by computer-generated English translation of Japanese patent 2001-234281 (JP'428).

6. JP'281 steel alloy examples A, C-F, H, and I in Table 1 on page 7 meet the claimed composition. Moreover similar to present invention, prior art steel is used for hot-dip galvanizing and exhibits high formability and high strength, such that $TS \times EL \geq 21,000$.

7. Even though JP'281 does not teach equation (1) as recited by the claim 1, such properties attributed to the equation are met by JP'281 ($TS \times EL \geq 21000$). Moreover when calculated, the equation limitation is satisfied by specific examples A, C-F, H and I in table 1 with their respective tensile strength values in MPA shown in table 2. Also it should be noted that it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, see *In re Cooper and Foley*, 57USPQ117.

8. Furthermore, JP'281 steel meets dependent claims. See steel D and E contain Ti, Nb and/or V in amounts within the ranges recited by claim 2: Steel F contains B in an amount within the range recited by claim 3 and when calculated, satisfies equation 2; and Steel I contain Ca in an amount with the range recited by claim 4.

9. In regard to claim 5, JP'281 in paragraph [0009] on page 2 teaches more than 50% of ferrite grains have an aspect ratio of 0.5 to 3.0 in order to excel in zinc galvanizing adhesion and moldability.

10. In regard to claims 6 and 7, JP'281 teaches steel sheet is subjected to hot rolling and cold rolling followed with a hot-dip galvanizing treatment.

11. Claims 1, 2, 4, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by the computer-generated English translation of Japanese patent 2000-345288 (JP'288).

12. JP'288 steel alloy examples M, O, Q, T, V-Z, AA, AC, AF and AG in Table 1 on page 5 meet the claimed composition. Moreover similar to present invention, prior art steel is used for hot-dip galvanizing and exhibits high formability and high strength such that $TS \times EL \geq 18000$.

13. Even though JP'288 does not teach equation (1) as recited by the claim 1, such properties attributed to the equation are met by JP'281 ($TS \times EL \geq 18,000$). Moreover when calculated, equation is satisfied by specific examples in table 1 on page with their respective tensile strength values in MPA shown in table 2 on page 6. Also it should be noted that it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, see *In re Cooper and Foley*, 57USPQ117.

14. Prior art steel W contains 0.07% V, which is within the V range of 0.01 to 0.1% recited by claim 2.

15. Prior art steel Y contain 0.0021 Ca and 0.0024 REM, which are within the respective Ca and REM ranges recited by claim 4.

16. In regard to claims 6 and 7, JP'288 steel sheet is subjected to hot rolling and cold rolling followed with a hot-dip galvanizing treatment, see in paragraph [0013]-[0014].

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'288 in view of JP'281.

19. JP'281 discloses galvanizing steel that closely meets the present invention but fails to include 0.005 to 0.002%B or teach equation 2 recited by claim 3. It is, however, well known in the art that B is a common additive for analogous galvanizing steel to enhance steel reinforcement and intensity, as evident by JP'281 in last four lines of paragraph [0019]. Since reinforcement and intensity are properties desired and sought by JP'288, then it would be an obvious modification for one skilled in the art to add small amounts of B to JP'288 steel in view of JP'281 teaching to produce no more than the known and expect result from such an addition. Moreover, equation limitation would appear to be met since Mn content of JP'288 examples are within the inventive Mn

range, and JP'281 teaches 0.0001 to 0.01% B which encompasses and therefore suggest the inventive B range 0.0005 to 0.002%.

20. Moreover the galvanizing steel of JP'281 closely meets the present invention but fails to disclose aspect ratio of ferrite grains. It is, however, well known in the art to control the aspect ratio of ferrite grains in analogous galvanizing steel alloys to improve physical properties. See JP'281 in paragraph [0009] on page 2 wherein more than 50% of ferrite grains in steel have an aspect ratio of 0.5 to 3.0 in order to excel in zinc galvanizing adhesion and moldability. Since such properties are desired and sought by JP'288, then it would be an obvious modification for one skilled in the art to control the aspect ratio of ferrite grains to produce no more than the known and expect result from such a limitation.

Information Disclosure Statement

21. The information disclosure statement filed January 26, 2007 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/